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“Step Out From the Old to the New”

IS 417-6 (1976): Footballs, Volleyballs, Basketballs, Netballs, Throwballs and Water-polo Balls, Part VI: Water-polo Balls [PCD 22: Sports Goods]

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“ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है”

Bhartṛhari—Nītiśatakam

“Knowledge is such a treasure which cannot be stolen”



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**SPECIFICATION FOR
FOOTBALLS, VOLLEYBALLS, BASKETBALLS,
NETBALLS, THROWBALLS AND WATER-POLO BALLS**

PART VI WATER-POLO BALLS

(Third Revision)

1. Scope — Covers dimensional and other requirements for water-polo balls excluding the bladder.

2. Shape and Dimensions

2.1 When fully inflated the balls shall be spherical in shape with circumference of 68 to 71 cm and the other characteristics shall be as specified in Fig. 1.

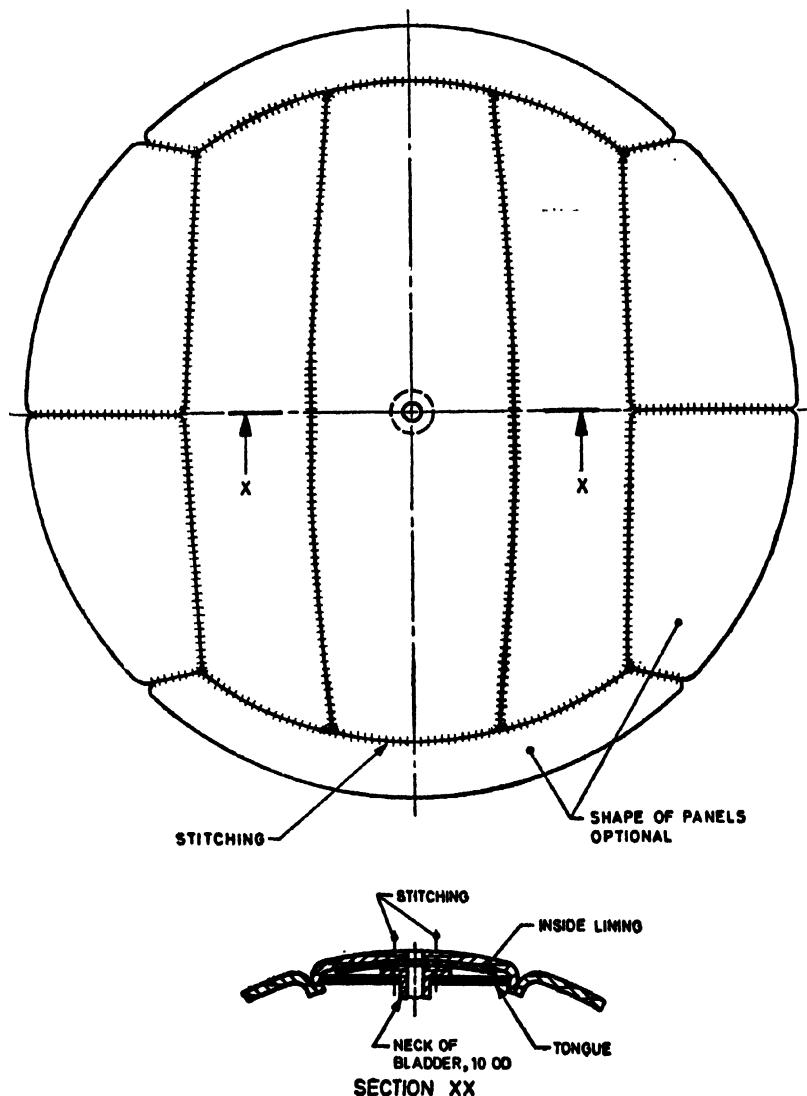


FIG. 1 WATER-POLO BALL

2.2 Mass of the ball with fully inflated bladder shall be 400 to 450 g.

2.3 Colour — Shall be dark crimson or white or as desired by the purchaser.

3. Materials for Construction

3.1 Leather — The balls shall be manufactured from butt or bend portion of tight-textured cowhide, free from flay cuts and grain defects, vegetable or chrome tanned, dyed in any colour or pigmented as agreed to between the purchaser and the supplier. But at the end of tanning operation and before drying, suitable fungicides shall be incorporated into the leather for promoting resistance to mould growth in the leather; these shall be effective and non-toxic. The tanned leather shall be substantially fat-liquored or oiled or both and the surface obtained shall be smooth and well set.

3.2 Threads for Stitching — Rot-proofed linen thread, having 5 plies, shall be used for stitching. The minimum breaking strength of single yarn shall be 4.5 kgf (45 N) when tested according to the method given in IS : 1670-1970 'Method for determination of breaking load, elongation at break and tenacity of yarns (first revision)'.

3.3 Lining Cloth — Subject to agreement between the purchaser and the supplier, water-polo ball covers may be provided with new cotton drill or canvas lining.

4. Construction and Workmanship

4.1 The balls shall be made from a suitable number of panels of shapes capable of giving sphericity.

4.2 Stitching — The balls shall be stitched with linen threads and shall have 24 to 25 stitches per decimetre. The stitches shall be well-stretched. When the ball is inflated fully the threads that are visible shall be not more than 2 mm deep from the surface of the ball.

4.3 Mouth — The ball shall have its mouth as shown in Fig. 1. The mouth shall be adequate and permit the nozzle of the inflating pump or needle to be accommodated and suitable means provided to deflate the ball. The neck of the bladder shall be completely inside the mouth.

5. Sampling and Inspection

5.1 Sampling

5.1.1 Lot — In any consignment, all the balls of one type manufactured from the same raw materials shall be grouped together to constitute a lot.

5.1.2 Samples for test shall be selected at random from each lot in accordance with col 1 and 2 of Table 1.

5.2 Inspection

5.2.1 Each ball in the test samples shall first be examined for materials of construction as given under 3. If any ball in the test sample is noticed to have been made up of materials other than those specified, all the balls in the lot shall be examined and those not conforming shall be rejected.

5.2.2 If the balls are made up of satisfactory materials, then each ball in the test sample shall be inspected for shape and dimensions (see 2), colour (see 2.3), construction and workmanship (see 4).

5.2.3 During inspection of sample balls in 5.2.2 each instance of lack of conformity of the ball to the specification shall be considered as a defect of the ball. While examining sample balls, the total number and types of such defects shall be noted down.

5.3 Criterion for Acceptance

5.3.1 A lot shall be accepted as conforming to this standard, if the corresponding test samples satisfy the conditions of 5.3.1.1 and 5.3.1.2.

5.3.1.1 Total number of defects observed during testing as in 5.2.3 shall not be more than the corresponding acceptance number given in col 3 of Table 1.

5.3.1.2 Total number of defects of any one type observed when tested as in 5.2.3 shall be less than half the corresponding acceptance number.

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TO

IS : 417 (Part VI)-1976 SPECIFICATION FOR FOOTBALLS, VOLLEYBALLS,
BASKETBALLS, NETBALLS, THROWBALLS AND WATER-POLO BALLS

PART VI WATER-POLO BALLS

(*Third Revision*)

Alterations

(*Page 1, clause 2.1, lines 1 and 2*) — Delete the words 'and the other characteristics shall be as specified in Fig. 1'.

(*Page 1, Fig. 1*) — Delete.

(*Page 2, clause 3.1*) — Substitute the following for the existing clause:

'3.1 *Leather* — The balls shall be manufactured from butt portion of tight-textured cowhide or buffalohide, free from flay cuts and grain defects, vegetable/semi-chrome or chrome tanned, dyed in any colour or pigmented as agreed to between the purchaser and the supplier. At the end of tanning operation, and before drying, suitable fungicides shall be incorporated into the leather for promoting resistance to mould growth in the leather, these shall be effective and non-toxic. The tanned leather shall be substantially fat-liquored or oiled or both and the surface obtained shall be smooth and well set.'

(*Page 2, clause 4.2*) — Substitute the following for the existing clause:

'4.2 *Stitching* — The ball shall be stitched with linen thread and shall have 24 ± 2 stitches per decimetre. The stitches shall be well stretched. When the ball is fully inflated, the visible threads shall be not more than 2 mm deep from the surface of the ball. The panels for water-polo balls should preferably be cut with self-cutting-cum-perforating dies.'

(*Page 2, clause 4.3, first sentence*) — Delete.

Addendum

(*Page 1, clause 2.1*) — Add the following new clause after 2.1:

'2.1.1 A tolerance of 1 percent in the circumference on sphericity shall be allowed.'

TABLE 1 SIZE OF TEST SAMPLE AND ACCEPTANCE*(Clauses 5.1.2 and 5.3.1.1)*

No. of Balls in the Lot (1)	No. of Balls to be Selected (2)	Acceptance Number* (3)
Up to 15	3	2
16 , 28	5	3
28 , 40	7	5
41 , 65	10	7
66 , 110	15	10
111 , 180	25	16
181 , 300	35	22
301 and above	50	30

*The number of defects observed in the test samples.

6. Marking — Unless otherwise required by the purchaser, each ball shall bear the manufacturer's name, initials or trade-mark.

6.1 ISI Certification Marking — Details available with the Indian Standards Institution.

7. Packing — Each ball shall first be wrapped in polyethylene cover and then packed together with other balls similarly wrapped according to the instructions of the purchaser.